In all years displayed, Montana's overall (i.e. all cause) age-adjusted death rates are below or about equal to those for the U.S. Montana's age-adjusted rates are also below those for the U.S. for many of the chronic diseases displayed; Montana's rates for heart disease, cancer, and nephritis (nephritis, nephrotic syndrome, and nephrosis) were lower than those for the U.S in eight or nine of the years for which both Montana and U.S. values are displayed. Montana's rates for, chronic liver disease and cirrhosis were lower than U.S. rates in all of the ICD-9 years but about the same or higher in the ICD-10 years. Montana's rates for one traumatic cause of death, homicide and legal intervention, were lower than the corresponding U.S. rates in all years displayed.

Montana's rates for cerebrovascular disease, pneumonia and influenza, and diabetes showed inconsistent relationships with the U.S. rates, with the trend lines crossing each other more than once in this period. Diabetes rates for Montana were higher than those for the U.S. in one of the four years in which underlying cause of death was determined with the rules of ICD-9 and two times thereafter. The U.S. diabetes rate seems relatively unaffected by the conversion to ICD-10. The Montana diabetes rate appears less stable before and after the conversion, but this may be the result of a change in a relatively small number of deaths from diabetes and have nothing to do with the revision of ICD.
Montana's rates for cerebrovascular disease were higher than those of the U.S. for two of the four years in which ICD-9 coding rules were used and two of the ICD-10 years.

The state rates for chronic lower respiratory disease (C.L.R.D.)--which includes chronic and unspecified bronchitis, emphysema, and asthma--were higher than those for the U.S. in all years displayed. Revision of ICD did not change this relationship. Montana's Alzheimer's rate was virtually the same as that of the U.S. in 1997, but higher in all other years displayed. Revision of ICD substantially increased Alzheimer's rate for both Montana and U.S.

Montana's rates for most unintentional traumatic causes of death; accident (both motor vehicle and non-motor- vehicle) and suicide rates were higher than those for the nation in all years displayed, irrespective of the ICD coding rules. Neither the accident nor the suicide rates appear to have been affected greatly by ICD revision.

These graphs show secular (i.e. long-term, despite occasional instability in the short-term) reductions in Montana's age-adjusted death rates for specific chronic diseases such as heart disease, cancer, and cerebrovascular disease. There seems to be a slight decrease in pneumonia and influenza rates, but it is not nearly so pronounced. The rates for Alzheimer's, chronic liver disease and cirrhosis, and nephritis are on the increase, although the trends are somewhat inconsistent and, in some cases, possibly affected by the conversion of ICD coding.

The rates for C.L.R.D., diabetes, and suicide are apparently neither increasing nor decreasing consistently. While U.S. death rates for accidents seem stable, Montana's are increasing for both motor vehicle and non-motor- vehicle accidents.

For both Montana and the U.S., age-adjusted death rates for nephritis and Alzheimer's increased after the introduction of ICD-10, suggesting that, to some degree, the increase reflects conversion to the new revision of ICD. The rate for pneumonia and influenza decreased after the conversion to ICD-10. These results are consistent with the comparability ratios for these causes discussed earlier. (See **Figure 1** in the Technical Overview.)

AGE, SEX, AND RACE

Cause of death is age, sex, and race-dependent. Males were more likely than females to die of many of the leading causes of death listed in **Table S-7**. Cancer claimed 963 males and only 895 females. More males than females also died of chronic lower respiratory diseases and chronic liver disease and cirrhosis. The larger difference between males and females, however, was seen in deaths from traumatic causes. About three quarters more males than females died of accidents (337 as opposed to 192). Three times as many males as females died of homicide (76 as opposed to 24). Finally, more than four times as many males as females committed suicide (141 as opposed to 33). There was one major exception, however. While 1,217 males died of heart disease, 1,297 females did so.

It is also instructive than slightly more than a 22.6% of the Native Americans who died in 2004 died of one of the traumatic causes, while 8.2% of whites were claimed by these causes. Motor vehicle accidents caused nearly 10% of Native American deaths but only a little less than two and a half percent of the deaths of whites. Suicide was the underlying cause for 3.7% of Native American deaths but only 2.1% of the deaths of whites. Homicide claimed 1.7% of the Native Americans who died in 2004, but only 0.2% of the whites.

Accidents were more likely to cause the deaths of the young than the old. They accounted for 21.4% of the deaths of those 14 years of age or younger, 59.9% of the deaths of those between the ages of 15 and 24, and 44.6% of those between the ages of 25 and 34 years. By contrast, accidents accounted for 6.5% of the deaths for the entire population (i.e. the "all-age" group). Suicide was the cause of death for 17.4% of the decedents between the ages of 15 and 44. By contrast, it was the cause of death for only 2.2% of decedents of all ages. Of the suicide victims, 81.0% were males.

As age at death increases, chronic diseases—particularly hear disease and cancer—become more likely as the cause of death. Cancer, followed by heart disease, was the leading cause of death for all of the age categories between 45 and 74 years. However, for the age categories 75 and older, heart disease was the leading cause, with cancer second.

For the all-age category, cancer (23.0 %) was the leading cause of death, followed closely by heart disease (22.7%). Chronic lower respiratory disease (C.L.R.D.) at 7.2%, accidents at 6.5%, cerebrovascular disease (6.0 %) and diabetes, Alzheimer's, suicide, pneumonia and influenza and nephritis, nephrotic syndrome and nephrosis were a distant fifth through tenth, respectively. Frequencies and crude rates for the ten leading causes of death are shown for Montana and each of its counties in **Table S-6**.

Figure 47 displays frequencies of death for Montanans in 2004 by race, sex, and selected major cause of death.

Figure 47

FREQUENCY OF DEATH BY SELECTED CAUSE, RACE, AND SEX
MONTANA RESIDENTS, 2004

Cause of Death	All Races Male	All Races Female	White Male	White Female	Native American Male	Native American Female
All Causes	4,064	4,019	3,506	3,500	328	346
Cancer	963	895	859	779	65	82
Heart Disease	933	901	811	800	83	70
Chronic Lower Respiratory Diseases	314	264	290	239	19	19
Accidents	337	192	264	155	22	19
Cerebrovascular Disease	205	279	186	236	15	36
Diabetes Mellitus	114	122	88	106	8	6
Alzheimer's Disease	69	159	59	142	10	17
Suicide	141	33	113	31	14	1
Pneumonia & Influenza	78	87	71	73	6	9
Nephritis, Nephrotic Syndrome, and Nephrosis	51	56	43	52	5	1
Chronc Liver Disease and Cirrhosis	57	38	42	22	7	0
Homicide	19	6	8	5	4	1
All Other Causes	783	987	672	860	70	85

As was mentioned in the Technical Overview of this report, the Montana death certificate, beginning in 2003, records race in greater detail than in the past. Not only are more racial categories used, but informants are also specifically asked to name all of the several classifications that may apply to a decedent. The result of this additional prompting has been a much greater proportion of decedents classified by two or more races. This different manner of counting deaths by race could very possibly alter the outcome of mortality ratios calculated for the various races and affect apparent racial disparities. **Figure 48** displays the distribution of decedents by race for the last decade, by year of death.

Figure 48

FREQUENCY AND PERCENT DISTRIBUTION OF DEATH BY RACE
MONTANA RESIDENTS, 1995-2004

RACE	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ALL RACES	7,614	7,686	7,730	7,960	8,082	8,071	8,252	8,473	8,445	8,083
WHITE	7,225	7,340	7,374	7,590	7,618	7,668	7,839	8,003	7,207	7,006
Percent	94.9	95.5	95.4	95.4	94.3	95.0	95.0	94.5	85.3	86.7
NATIVE AMERICAN	360	316	333	345	429	366	385	433	402	403
Percent	4.7	4.1	4.3	4.3	5.3	4.5	4.7	5.1	4.8	5.0
OTHER SINGLE RACE	26	27	21	19	32	36	25	34	41	27
Percent	0.3	0.4	0.3	0.2	0.4	0.4	0.3	0.4	0.5	0.3
MULTI-RACE	1	0	1	1	0	0	0	1	791	633
Percent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	7.8
UNKNOWN	2	3	1	5	3	1	3	2	4	14
Percent	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2